

# RAD ANT

ELECTRIC HEAT



  
**ceramiccircuit**



## Infrared Radiant Heaters and Controls

N112 W14600 Mequon Road · Germantown, WI 53022 · 1-800-774-4450 · [www.electricheat.com](http://www.electricheat.com)

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# About REH

Radiant Electric Heat (REH) is headquartered in Germantown, Wisconsin. At REH, we manufacture CeramiCircuit™ infrared radiant electric heating panels which have been the quality standard in the industry for over half a century.

Our products include a wide variety of baseboard, cove and ceiling radiant heating systems which have proven to be cost effective and service-superior over decades of use. REH products are suitable for residential, commercial, institutional and industrial applications.

In many installations, CeramiCircuit panels have produced energy savings of up to 73% over more conventional heating systems; equally impressive are the savings in carbon emissions. By applying the concept of radiant heating well before most others, Radiant Electric Heat has been a leader in technology and innovation in the energy conservation segment of the heating industry since 1948.

Today there are a lot of options in the HVAC industry on how best to create a thermally comfortable environment that is also energy efficient, environmentally friendly and cost effective. Our infrared heating panels are the solution to all four in nearly unequalled fashion.

It is a product that not only competes with many of its HVAC counterparts; in application after application it outperforms them in all four of the above mentioned areas. Whether it is commercial, institutional, residential or industrial, there is not a convective system in existence that can match the efficiency of REH's infrared radiant panels.

The REH staff is committed to carrying forward our founders pioneering work while delivering a level of quality and customer service that is unequalled in the industry.



# Eastern Edison Company

## Eastern Edison Company

PO Box 71 36 Main Street Brockton Massachusetts 02403 Telephone (617) 580-1213

Mr. Richard Needham  
Continental Radiant Glass Heat  
50 Cole Parkway  
Scituate, MA 02066

Dear Mr. Needham:

Two meters were installed for test purposes at the West  
Bridgewater Housing Authority from 3/23 to 3/30. The readings  
are as follows:

3/23	Apt. G Bldg. 6	meter #128630	reading 0	installed
3/30	Electric Base-	removed	reading 54	kwhrs
	board heat			
3/23	Apt. H Bldg. 6	meter #128633	reading 0	installed*
3/30	Glass Heat	removed	reading 30	kwhrs

The meters, as you know, record only the usage. I do not know  
how controlled the conditions were surrounding the test.

Very truly yours,

David E. Rodenbush  
Consumer Services Representative

OER/js

\* REH Installed Product

# Apartment Savings

## The Superior Choice for Multi-family Structures

*Lower Electric Bills  
No Seasonal Maintenance*

INFRARED RADIANT HEAT IS GREEN



• Green Builder Advantageous • Planet Friendly  
• No Emissions • Works With Wind, Solar & Hydro

### OLD CONVECTIVE HEATING

RESIDENCES	UNITS PER RESIDENCE	KWH/YEAR	KWH UNIT AVERAGE	TOTALS
Tobin Towers Quincy Housing Authority 85 Clay St., Quincy, MA	200	3,399,500	16,998	Convective Heating 517 Residences 7,445,600 KWH  14,401 KWH Average per Residence
Marlboro Housing Authority Main & Newton Streets Marlboro, MA	125	1,674,300	13,395	
Northampton Housing Authority Gonz St., Northampton, MA	192	2,371,800	12,353	

### NEW CERAMICIRCUIT HEATING

RESIDENCES	UNITS PER RESIDENCE	KWH/YEAR	KWH UNIT AVERAGE	TOTALS
Ocean View Quincy Housing Authority 73 Bicknell St., Quincy, MA	275	3,062,250	11,135	Ceramicircuit™ Heaters 590 Residences 6,429,750 KWH  10,898 KWH Average per Residence
Pagnano Tower Quincy Housing Authority 109 Curtis Ave., Quincy, MA	165	1,725,000	10,455	
Sawyer Tower Quincy Housing Authority 95 Martensen St., Quincy, MA	150	1,642,500	10,950	

*\*One bedroom units average size of 480 sq. ft. Savings based on current Con Edison rate of \$0.1673 per KWH as of 10/2009*

*3,503 KWH saved per unit  
in one heating season*

*\$586.00 average single unit  
savings in one heating season*

*\$345,740 TOTAL savings on  
590 units in one heating season*

## Key Benefits of Radiant Electric Heating

- Save up to 73% in energy costs over other traditional heating methods.
- Simple low cost installation.
- Comfortable at lower thermostat settings; heats people first then the air.
- Room by room zone control provides economical comfort only where you need it.
- Works great with setback thermostats; rapid recovery times raise temperatures into your comfort zone in minutes not hours.
- Reduce carbon emissions; most of all when replacing direct-fired gas heating units in industrial, warehouse and garage applications.
- No future maintenance expense, no service requirements, no filters to replace and no inspections.
- Reliable – Many of our panels are still providing comfort after 62 years of service.
- Extremely clean with zero emissions; no danger of asphyxiation and perfect for those with allergies and/or chemical sensitivities.
- Low operating temperature eliminates the risk of fires.
- Perfect for new construction, remodeling, additions, basement recreation rooms, garages and workshops.
- Suitable for residential, commercial, medical and industrial applications.
- Radiant Electric Heat produces its infrared radiant panels in a state of the art, low-impact, environmentally clean manufacturing facility.



# Riveredge Country Club - Marshfield, WI

Riveredge Country Club is a 6,400 Sq.Ft restaurant, bar and banquet facility that was heated with a propane fired\*, ducted, forced air heating system and converted to CeramiCircuit™ Radiant Electric Heat Model 945 and 1445 Cove Panels.



## Installation Details and Customer Savings

- (40) 945C 1,000 Watt Units
- (7) 1445C 1,500 Watt Units
- Installed at 7.89 Watts per square foot
- \$96.77 Average Energy Cost Per Day With Old Forced Air System
- \$25.81 Average Energy Cost Per Day With New CeramiCircuit Radiant Electric Heating System
- \$10,644 SAVINGS Per Heating Season

*\*NOTE: If the original heating system was a natural gas fired furnace, the seasonal savings with the REH cove heaters would have been \$7,294.*



## CeramiCircuit™ and Hot Yoga

When you are in a traditional Hot Yoga studio or Sauna, you are in a room with very hot, circulating air. When in a studio heated by a CeramiCircuit infrared heating system, the infrared heat penetrates and warms your body, eliminating the scorching, drying effect of moving air which is inherent in all convective heating systems. This warming effect on your body stimulates your cardiovascular system. It is no surprise that Yoga studios all over the country are turning to Radiant Electric Heat CeramiCircuit Infrared Heating Systems to safely, efficiently and cost effectively heat up their sessions.

### Benefits of Hot Yoga using CeramicCircuit Infrared Heat

- Achieve and maintain high temperatures at a fraction of the cost of other HVAC systems.
- Burns hundreds of calories.
- Strengthens the cardiovascular system.
- Eases joint pain and stiffness while relaxing muscles and increasing flexibility.<sup>1</sup>

<sup>1</sup>SM Fortney, and NB Vroman, "Exercise, performance and temperature control: temperature regulation during exercise and implications for sports performance and training." (1985), <http://www.ncbi.nlm.nih.gov/pubmed/3883461> (Mar 30 2012).



# Installation Examples

Arlington Housing Authority; Arlington, MA  
Ashtabula Housing Authority; Ashtabula, OH  
Bridgewater Housing Authority; Bridgewater, MA  
Burlington Housing Authority; Burlington, MA  
Center for Disability Services; Albany, NY  
Cuyahoga Metropolitan Housing Authority; Cleveland, OH  
Cytonet; Durham, NC  
Department of Corrections; Trenton, NJ  
First Evangelical Lutheran Church; Grand Rapids, MN  
Flowers Essence Services; Nevada City, CA  
Hampton Hotels; Horseheads, NY  
Harbor Athletics; Madison, WI  
Harvard University  
Hot Yoga Helena; Helena, MT  
Housing Authority of Elizabethtown; Elizabethtown, KY  
Jersey Shore University Medical Center  
King Country Housing Authority; Seattle, WA  
Lighthouse Baptist Church; Holbrook, MA  
Love Tabernacle; Milwaukee, WI  
Mad Mex; Pittsburgh, PA  
Main Street Houses; South Fallsburg, NY  
Montana State University  
National Park Service  
New London Housing Authority; New London, CT  
Nordstrom; Irvine, CA  
Osthoff House; Elkhart Lake, WI  
Pennsylvania Trolley Museum; Washington, PA  
Pizzas by Marchelloni; Fairbury, IL  
Plum Healthcare Group; San Marcos, CA  
Red Root Hot Yoga; Davenport, IA  
Riveredge Country Club; Marshfield, WI  
San Francisco Airport Commission; San Francisco, CA  
St Joseph Church; Providence, RI  
Stanford University  
State University of New York  
Studio Bikram Walnut Creek; Piedmont, CA  
Sunoco Refining Supply; Philadelphia, PA  
Taylor Design Healthy Homes; Townshend, VT  
The Athletic Club; Guelph, ON  
TJC and Associates, Inc; Oakland, CA  
University of Alaska – Fairbanks  
University of California – San Diego, - Riverside, - Berkeley  
University of Ohio – Miami  
University of Rhode Island  
US Geological Survey  
Valley View Nursing Home; Frenchtown, NJ  
Vernon Housing Authority; Vernon, CT  
Waterfront Restaurant; San Francisco, CA  
Westerly Housing Authority; Westerly, RI  
Weston Community Housing; Weston, MA  
Wisconsin Stamping; Germantown, WI  
YMCA; Metuchen, NJ

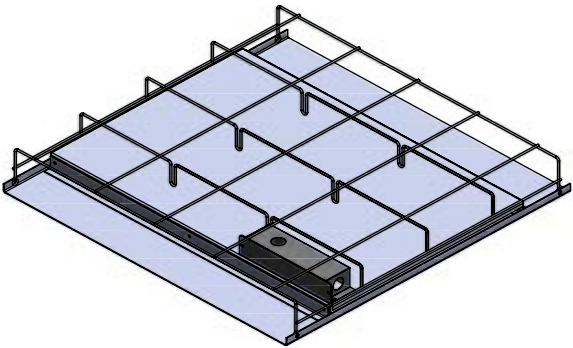
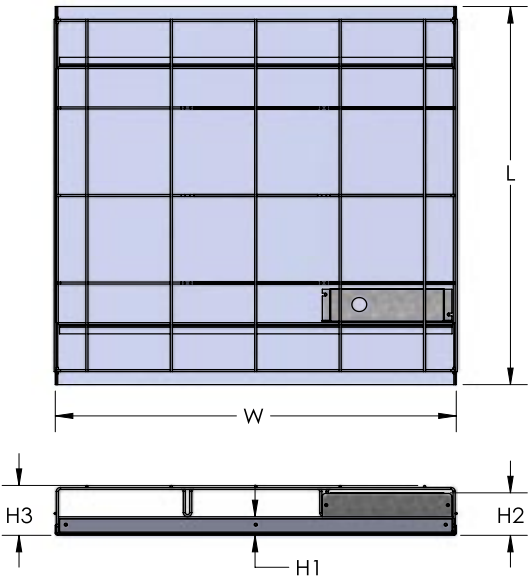


Cove Installation  
TJC and Associates, Inc; Oakland, CA

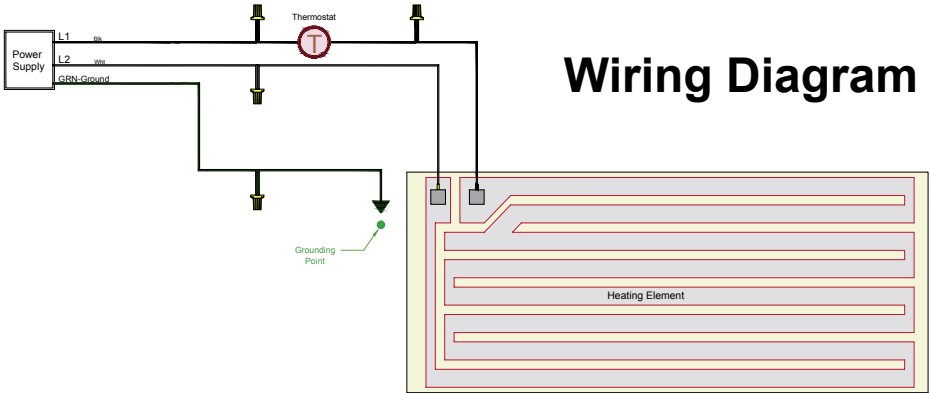


Wisconsin Stamping, Germantown, WI

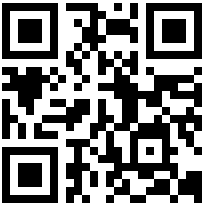
# 1624 CL - Drop-In Ceiling Panel



Wall Model	Watts	W	L	H1	H2	H3
1624CL	625	23.75"	23.75"	1.17"	2.67"	3.13"



Wiring Diagram



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## IMPORTANT INSTRUCTIONS

When using electrical appliances, basic precautions should always be followed to reduce the risk of fire, electric shock, and injury to persons, including the following:

1. Read all instructions before using this heater.
2. This heater is hot when in use. To avoid burns, do not let bare skin touch hot surfaces. Keep combustible materials, such as furniture, pillows, bedding, papers, clothes, etc. and curtains at least 3 feet (0.9 m) from the front of the heater and keep them away from the sides and rear.
3. Extreme caution is necessary when any heater is used by or near children or invalids and whenever the heater is left operating and unattended.
4. Do not operate any heater after it malfunctions. Disconnect power at service panel and have heater inspected by a reputable electrician before reusing.
5. Do not use outdoors.
6. To disconnect heater, turn controls to off, and turn off power to heater circuit at main disconnect panel.
7. Do not insert or allow foreign objects to enter any ventilation or exhaust opening as this may cause an electric shock or fire, or damage the heater.
8. To prevent a possible fire, do not block air intakes or exhaust in any manner.
9. A heater has hot and arcing or sparking parts inside. Do not use it in areas where gasoline, paint, or flammable vapors or liquids are used or stored.

Use this heater only as described in this manual. Any other use not recommended by the manufacturer may cause fire, electric shock, or injury to persons.

## SAVE THESE INSTRUCTIONS

### Construction

**Heating Elements:** Porcelain enamel coated 18 gauge steel plate, with energizing ceramic circuit on internal face of heating element; minimum 1.7 Watts per square inch of emissive surface area.

**Heater Body:** 20 gauge steel, high-temperature resistant powder coating. Provided with manufacturer's standard 1.5 foot leads, high density foil backed insulation, enclosure, and junction box.

**Accessories:** Provide as indicated, thermostat and NEMA 1 Enclosure control panel for models specified.

**Installation:** Install heating units where indicated, in accordance with manufacturer's written instructions, applicable requirements of IEC, in compliance with

recognized industry practices to ensure products fulfill requirements. Top of heater unit and trim shall be level. Where heating units are mounted adjacent to each other, the top edges shall be at the same height.

### Maintenance Instructions

Maintenance of your CeramiCircuit™ heater is not needed, though you may want to clean it as necessary. The user can perform cleaning. All other servicing is to be done by qualified service personnel.

1. Turn off the power at the circuit breaker panel
2. Wait for the heating element to cool.
3. Clean area with a dry cloth.
4. Restore power.

### Operating Instructions

1. Heater must be properly installed before it is used.
2. Refer to the thermostat or controller's operating instructions for proper usage.

## INSTALLATION INSTRUCTIONS

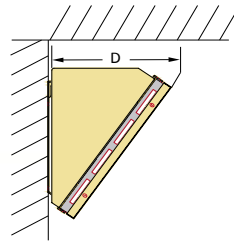
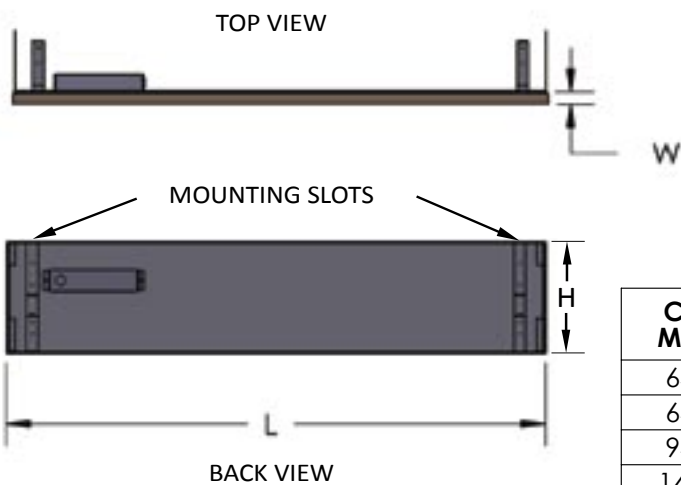
Heaters are hard wired directly to the electrical main. Junction boxes are not required except as indicated by local code or inspection requirements. Wiring procedures and connections should be in accordance with the National Electric Code (NEC) and local codes. Connection box is 4.62 in<sup>3</sup> (75.69 cm<sup>3</sup>).

To reduce the risk of fire, do not store or use gasoline or other flammable vapors and liquids in the vicinity of the heater. CAUTION - High temperature. Keep electrical cords, drapes, and other furnishings away from heater.

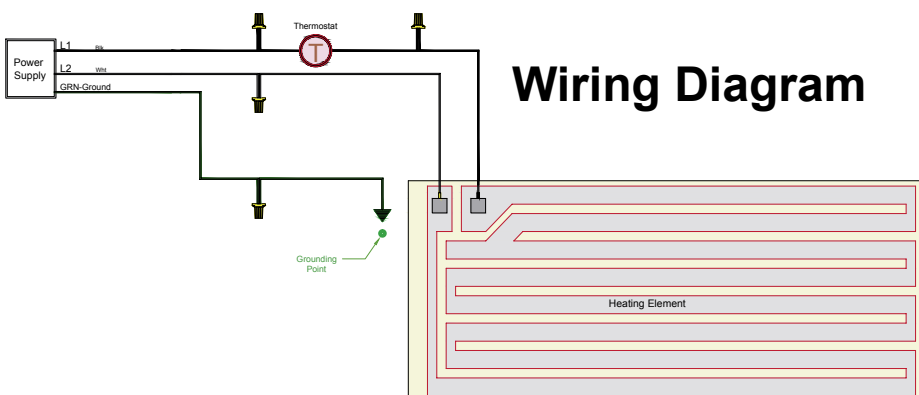
Grounding is required for each heater. Remove all construction debris (plaster, sawdust, etc) from interior and exterior of the heater. Do not install heaters against combustible low density cellulose fiberboard surfaces. Heaters are not to be placed below an electrical convenience receptacle. Install heater at least 6 inches (15.24 cm) from drapes.

1. Remove all packing material.
2. Place heater assembly in suspension grid.
3. Secure according to local building and electrical codes.
4. Attach grounding wire to ground screw on the flange tab.
5. Connect mains to heater lead wires.
6. Check tightness of all electrical connections. Inspect all connections for short circuits.

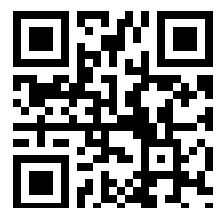
# Cove Mounting



Cove Model	Watts	L	H	W	D
632C	585	33"	7"	1.125"	5.5"
645C	825	46"	7"	1.125"	5.5"
945C	1000	46"	10"	1.125"	7.5"
1445C	1500	46"	15"	1.125"	10"



**Wiring Diagram**



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## IMPORTANT INSTRUCTIONS

When using electrical appliances, basic precautions should always be followed to reduce the risk of fire, electric shock, and injury to persons, including the following:

1. Read all instructions before using this heater.
2. This heater is hot when in use. To avoid burns, do not let bare skin touch hot surfaces. Keep combustible materials, such as furniture, pillows, bedding, papers, clothes, etc. and curtains at least 3 feet (0.9 m) from the front of the heater and keep them away from the sides and rear.
3. Extreme caution is necessary when any heater is used by or near children or invalids and whenever the heater is left operating and unattended.
4. Do not operate any heater after it malfunctions. Disconnect power at service panel and have heater inspected by a reputable electrician before reusing.
5. Do not use outdoors.
6. To disconnect heater, turn controls to off, and turn off power to heater circuit at main disconnect panel.
7. Do not insert or allow foreign objects to enter any ventilation or exhaust opening as this may cause an electric shock or fire, or damage the heater.
8. To prevent a possible fire, do not block air intakes or exhaust in any manner.
9. A heater has hot and arcing or sparking parts inside. Do not use it in areas where gasoline, paint, or flammable vapors or liquids are used or stored. Use this heater only as described in this manual. Any other use not recommended by the manufacturer may cause fire, electric shock, or injury to persons.

## SAVE THESE INSTRUCTIONS

### Construction

**Heating Elements:** Porcelain enamel coated 18 gauge steel plate, with energizing ceramic circuit on internal face of heating element; minimum 2.3 Watts per square inch of emissive surface area.

**Heater Body:** 20 gauge steel, high-temperature resistant powder coating. Provided with manufacturer's standard 7/8 inch knockouts for power feed.

**Accessories:** Provide as indicated, thermostat, NEMA 1 Enclosure control panel, and mounting brackets for models specified.

**Installation:** Install heating units where indicated, in accordance with manufacturer's written instructions, applicable requirements of IEC, in compliance with recognized industry practices to ensure products fulfill requirements. Secure in place with mounting brackets. Top of heater unit and trim shall be level. Where heating units are mounted adjacent to each other, the top edges shall be at the same height.

### Maintenance Instructions

Maintenance of your CeramiCircuit™ heater is not needed, though you may want to clean it as necessary. The user can perform cleaning. All other servicing is to be done by qualified service personnel.

1. Turn off the power at the circuit breaker panel
2. Wait for the heating element to cool.
3. Clean area with a dry cloth.
4. Restore power.

### Operating Instructions

1. Heater must be properly installed before it is used.
2. Refer to the thermostat or controller's operating instructions for proper usage.

## INSTALLATION INSTRUCTIONS

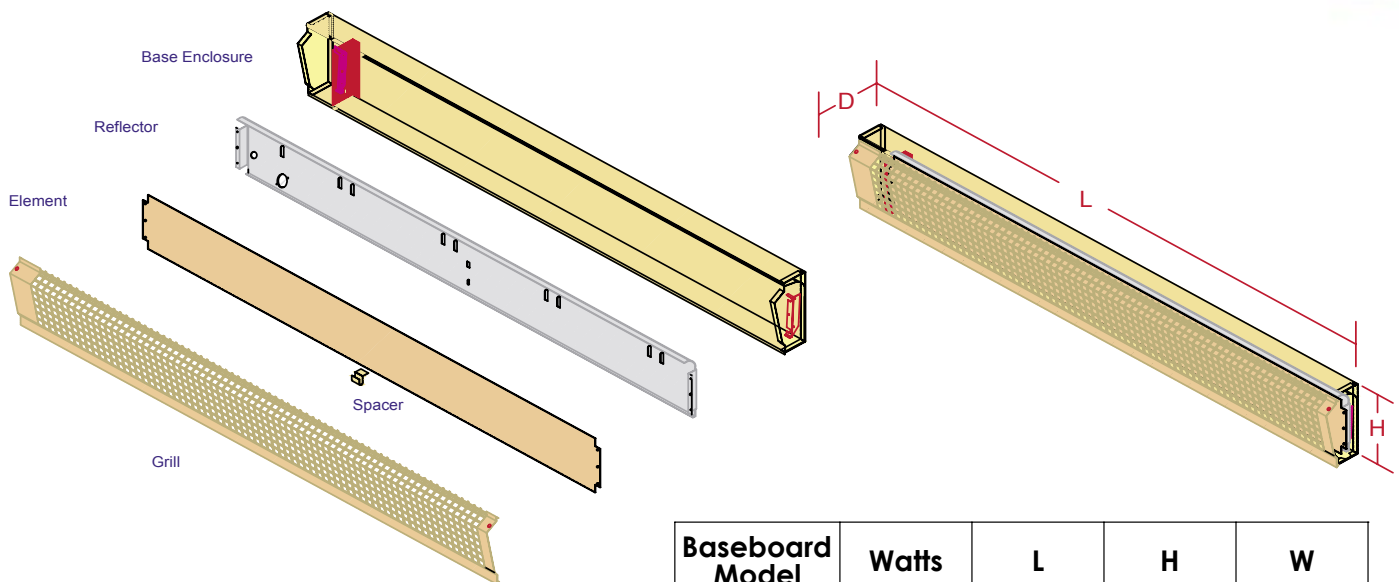
Heaters are not to be placed below an electrical convenience receptacle. Heaters produce high temperatures. Keep electrical cords, drapes, and other furnishings away from heaters. Do not store gasoline or flammable solvents in the vicinity of these heaters.

**Installation Warnings** - For supply connections use wires suitable for at least 194° F (90° C). Grounding is required for each heater. Remove all construction debris (plaster, sawdust, etc.) from interior and exterior of the heater. Do not install heaters against paperboard or low density surfaces.

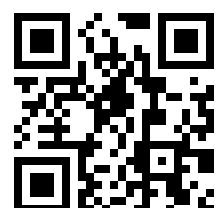
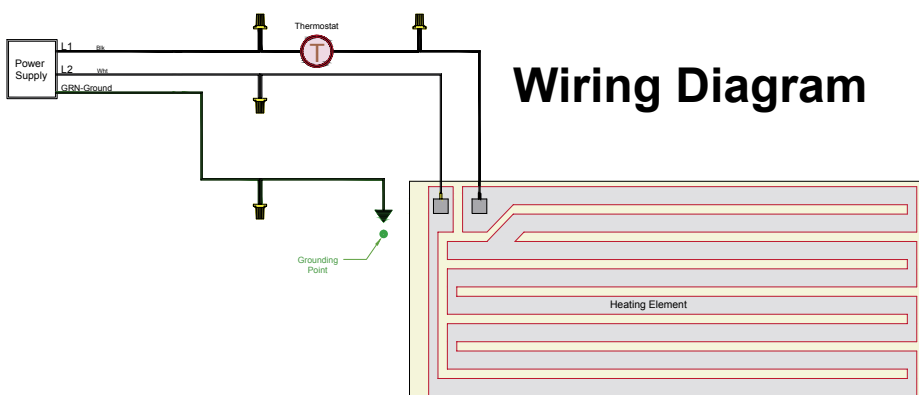
**Mounting Instructions** - Heaters are hard wired directly to the electrical main. Junction boxes are not required except as indicated by local code or inspection requirements. Install on studs or finished wall. Do not install less than 6 feet (1.8 m) from the floor and closer than 6 inches (152.4 mm) from vertical or horizontal surfaces.

1. Locate and level mounting brackets on studs or finished wall, taking into account the minimum clearances from vertical and horizontal surfaces.
2. Lay heating unit face down on a solid and protective surface to prevent scratching. Remove wire channel from rear of heater. Determine which raceway knockout will be used for electrical mains, knock plug out, run mains through hole and make connections according to code.
3. Hang the bottom edge of the heater on the bottom ends of the mounting brackets using the narrow slots in the edge of the heater. Do not use the wide slots for mounting.
4. Thread the electrical mains through the clamp in the raceway.
5. Attached the grounding wire to ground screw inside the raceway.
6. Connect mains to heater lead wires. Connect ground wire to threaded grounding screw. Check tightness of all electrical connections and wire nuts. Inspect all connections for short circuit.
7. Reattach raceway channel to rear of heater.
8. Attach end caps to heater.
9. Swing heater up and gently snap the top flanges into the top edge of the heater.
10. Fasten heater to brackets by driving screw through the pre-drilled holes.

# Baseboard Mounting



Baseboard Model	Watts	L	H	W
527B	400	30.87"	6.75"	3.125"
545B	650	48"	6.75"	3.125"



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## IMPORTANT INSTRUCTIONS

When using electrical appliances, basic precautions should always be followed to reduce the risk of fire, electric shock, and injury to persons, including the following:

1. Read all instructions before using this heater.
2. A heater has hot and arcing or sparking parts inside. Do not use it in areas where gasoline, paint, or flammable liquids are used or stored.
3. This heater is hot when in use. To avoid burns, do not let bare skin touch hot surfaces. Keep combustible materials, such as furniture, pillows, bedding, papers, clothes, and curtains away from heater.
4. Do not use on soft surfaces, like a bed, where openings may become blocked.
5. Do not insert or allow foreign objects to enter any openings as this may cause an electric shock or fire, or damage to the heater.

## SAVE THESE INSTRUCTIONS

### Construction

**Heating Elements:** Porcelain enamel coated 18 gauge steel plate, with energizing ceramic circuit on internal face of heating element; minimum 2.8 Watts per square inch of emissive surface area.

**Heater Body:** 20 gauge steel, high-temperature resistant powder coating. Provided with manufacturer's standard 7/8 inch knockouts for power feed.

**Accessories:** Provide as indicated, thermostat, NEMA 1 Enclosure control panel, and protective grill for models specified.

**Installation:** Install heating units where indicated, in accordance with manufacturer's written instructions, applicable requirements of IEC, in compliance with recognized industry practices to ensure products fulfill requirements. Top of heater unit and trim shall be level. Where heating units are mounted adjacent to each other, the top edges shall be at the same height.

### Maintenance Instructions

Maintenance of your CeramiCircuit™ heater is not needed, though you may want to clean it as necessary. The user can perform cleaning. All other servicing is to be done by qualified service personnel.

1. Turn off the power at the circuit breaker panel
2. Wait for the heating element to cool.
3. Remove grill.
4. Clean area with a dry cloth.
5. Replace grill.
6. Restore power.

### Operating Instructions

1. Heater must be properly installed before it is used.
2. Refer to the thermostat or controller's operating instructions for proper usage.

## INSTALLATION INSTRUCTIONS

Heaters are hard wired directly to the electrical main. Junction boxes are not required except as indicated by local code or inspection requirements. Wiring procedures and connections should be in accordance with the National Electric Code (NEC) and local codes.

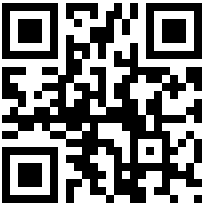
To reduce the risk of fire, do not store or use gasoline or other flammable vapors and liquids in the vicinity of the heater. Install on studs or finished wall. Height from rough floor to bottom of heater must be a minimum of 1-1/2 inches (3/4 inches from finished).

**CAUTION** - High temperature. Keep electrical cords, drapes, and other furnishings away from heater.

Grounding is required for each heater. Remove all construction debris (plaster, sawdust, etc) from interior and exterior of the heater. Do not install heaters against combustible low density cellulose fiberboard surfaces. Heaters are not to be placed below an electrical convenience receptacle. Install heater at least 6 inches below drapes.

1. Remove all packing material.
2. Remove grill cover from unit.
3. Remove heating element by removing only the center screws from the left and right sides. Note; use caution when handling the heating element so the electrical circuit is not scratched, or the soldered wire leads are not damaged.
4. Knockout hole for wire and insert wire clamp.
5. Locate the unit on the wall and level. The unit can be secured by screws direct into wall studs or into dry wall using suitable wall anchors.
6. Fish wire through clamp and make connections per diagram. Again, use caution in handling the element to avoid damaging the heater circuit.
7. After wire connections are complete and secure, re-fasten the heating element with the two screws removed in step 3. Be sure the wires are not being pinched while re-installing the element.
8. Replace grill.

# Heat Loss Questions



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Name:

Phone:

City, State of job:

Will infrared heat be the primary or supplemental source?

Dimensions (Measured in feet)

	Room 1	Room 2	Room 3	Room 4	Room 5	Room 6	Room 7	Room 8	Room 9	Room 10
Length										
Width										
Ceiling Height										
Exterior walls										
Building material										

Insulation Values (If R-value if known or list material and inches)

Walls										
Floor										
Ceiling										

Windows

Quantity										
Length										
Width										
U-value or Type										

Doors opening to outside

Quantity										
Length										
Width										
Type										

Heated Space

Above and/or Below?										
---------------------	--	--	--	--	--	--	--	--	--	--

# Three Part Specification

## SECTION 238330 – RADIANT HEATING UNITS

### PART 1 - GENERAL

#### 1.1 SUMMARY

- A. Section Includes: High efficiency infrared radiant panel heaters for:  
[portable] [cove] [wall] [ceiling] [baseboard] mounting.
- B. Related Sections
  - 1. Division 00 – General and Supplementary Conditions.
  - 2. Division 26 – Electrical: Wiring.
- C. References
  - 1. Underwriters Laboratory (UL)
  - 2. National Electrical Manufacturers Association (NEMA)
  - 3. International Electrical Code (IEC)
- D. Drawings, the provisions of the Agreement, the General Conditions, and Division 1 specification sections apply to all work of this Section.
- E. Substitutions: **\*\*\*One of the following\*\*\***
  - 1. [Substitutions will be considered only under the terms and conditions of Section 016000.]
  - 2. [Substitutions not allowed.]

#### 1.2 SUBMITTALS

- A. Make submittals in accordance with Section 013300.
- B. Product Data: Manufacturer's complete product data including wiring support diagram, switching, heater size and wattage, and color selector.
- C. Warranty: A sample copy of the Manufacturer warranty for the periods stipulated. Each specimen must be a preprinted representative sample of the issuing company's standard warranty for the units specified.
- D. Certification: Documentation demonstrating UL listing.

#### 1.3 DESIGN REQUIREMENTS

- A. Radiant heater units shall be ceramic circuit radiant panel type using porcelain enamel-coated steel plate. Calrod- or filament-type radiant heaters are not acceptable.

#### 1.4 QUALITY ASSURANCE

- A. Manufacturer: Company specializing in the manufacture of ceramic circuit radiant panel heaters.
- B. Installer: Hard-wired units shall be installed by a licensed electrician as applicable to the jurisdiction.

#### 1.5 REGULATORY REQUIREMENTS

- A. Conform to applicable building and jurisdictional codes for installation of heaters.

#### 1.6 DELIVERY, STORAGE, AND PROTECTION

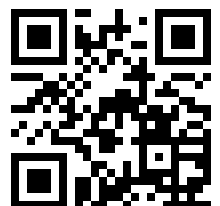
- A. In accordance with Section 016000.
- B. The Contractor together with the Owner or his designated Representative shall designate a storage area for all components. The area shall be cool, dry, out of direct sunlight, and in accordance with manufacturer's recommendations and relevant regulatory agencies. Materials shall not be stored in quantities that will exceed design loads, damage substrate materials, or hinder installation.

#### 1.7 ENVIRONMENTAL REQUIREMENTS

- A. Do not install heaters until building is enclosed, dust- or moisture-generating activities have terminated, and substrates have been finished as specified.
- B. Ensure that substrate materials are dry and free of contaminants. Do not commence with the installation unless substrate conditions are suitable. Contractor shall demonstrate that substrate conditions are suitable for the installation of the units.

#### 1.8 COORDINATION & PROTECTION

- A. Coordinate the work with the installation of associated wiring, panels, switches, and accessories, as the work of this section proceeds.



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# SECTION 238330 – RADIANT HEATING UNITS

## 1.9 WARRANTY

- A. In accordance with Section 017700.
- B. Manufacturer's Limited Warranty: Provide 10 year manufacturer's limited warranty under provisions of this section. This warranty provides for replacement of failed heating element to the original owner for a period of 10 years from the date of purchase.

## PART 2 - PRODUCT

*Use the next Article and one or more of the following 6 Articles for Proprietary Specification*

### 2.1 MANUFACTURER

- A. Radiant Electric Heat (Germantown, WI; 800-774-4450).

### 2.2 PORTABLE INFRARED CERAMIC PANEL HEATER

- A. [Model "1624," standard black finish] [Model "1624SS," stainless steel finish]; 1,000 Watts.
- B. Provide with thermostat and safety tip-over switch.
- C. Provide with wheels affixed to units.
- D. Plug-in installation.

### 2.3 COVE-MOUNT INFRARED CERAMIC PANEL HEATER

- A. [Model "1445C", 1500 Watts] [Model "945C", 1,000 Watts] [Model "645C", 825 Watts] [Model "632C", 585 Watts]
- B. [120] [208] [240] [277] Volt.
- C. Color: [Beige] [White] [Custom].
- D. Option: Integrated thermostat.
- E. For [plug-in] [hard-wire] installation.

### 2.4 WALL-MOUNT INFRARED CERAMIC PANEL HEATER

- A. [Model "1445W", 1,500 Watts] [Model "945W", 1,000 Watts].
- B. [120] [208] [240] [277] Volt.
- C. Color: [Beige] [White] [Custom].
- D. Option: Integrated thermostat.
- E. For [plug-in] [hard-wire] installation.

### 2.5 CEILING LAY-IN-MOUNT INFRARED CERAMIC PANEL HEATER

- A. [Model "1624CL", 625 Watts].
- B. [120] [208] [240] [277] Volt.
- C. Color: [White] [Custom].
- D. For [plug-in] [hard-wire] installation.

### 2.6 CEILING SURFACE-MOUNT INFRARED CERAMIC PANEL HEATER

- A. [Model "1445CL", 1,500 Watts] [Model "945CL", 1,000 Watts].
- B. [120] [208] [240] [277] Volt.
- C. Color: [Beige] [White] [Custom].
- D. For [plug-in] [hard-wire] installation.

### 2.7 BASEBOARD-MOUNT INFRARED CERAMIC PANEL HEATER

- A. [Model "545B", 650 Watts] [Model "527B", 400 Watts]
- B. [120] [208] [240] [277] Volt.
- C. Color: [Beige] [White] [Custom].
- D. Internal temperature limit switch.
- E. Option: Integrated thermostat.
- F. For [plug-in] [hard-wire] installation.



# SECTION 238330 – RADIANT HEATING UNITS

## 2.8 ACCESSORIES

- A. Thermostat: [Programmable] [Non-Programmable] [Digital Readout] [Line Voltage]
- B. Control Panel: NEMA 1 Enclosure; UL listed; 120 Volt control circuit.
- C. Mounting Brackets: As standard for type of unit specified.

*Use the next Article for Descriptive or Performance Specification*

## 2.9 INFRARED CERAMIC PANEL HEATER

- A. Heating Elements:
  - 1. Porcelain enamel coated 18 gauge steel plate
  - 2. Energizing ceramic circuit on internal face of heating element
  - 3. Wattage density: Minimum 2.3 Watts per square inch of emissive surface area.
- B. Heater Body:
  - 1. 20 gauge steel, high-temperature resistant powder coating.
  - 2. Provide manufacturer's standard 7/8 inch knockouts for power feed.
  - 3. Provide heater body safety grill as standard with type of unit specified.
- C. Design: [Portable] [Ceiling Cove-Mounted] [Wall-Mounted] [Baseboard-Mounted] type.
- D. Wattage: \*\*\*Select one or more of the following\*\*\*
  - 1. \*\*\*for Portable Heaters\*\*\* 1,000 Watts
  - 2. \*\*\*for Ceiling Cove Mount Heaters\*\*\* [1,500 Watts] [1,000 Watts] [825 Watts] [585 Watts]
  - 3. \*\*\*for Wall or Ceiling Mount Heaters\*\*\* [1,500 Watts] [1,000 Watts]
  - 4. \*\*\*for Baseboard Mount Heaters\*\*\* [650 Watts] [400 Watts]
- E. Voltage: [120] [208] [240] [277] Volt.
- F. For [plug-in] [hard-wire] installation.
- G. Accessories:
  - 1. Thermostat: [Programmable] [Non-Programmable] [Digital Readout] [Line Voltage]
  - 2. Control Panel: NEMA 1 Enclosure; UL listed; 120 Volt control circuit.
  - 3. Mounting Brackets: As standard for type of unit specified.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Prior to starting work, carefully inspect installed work of other trades and verify that such work is complete to the point where work of this Section may properly commence. Notify the Architect in writing of conditions detrimental to the proper and timely completion of the work.
- B. Do not begin installation until all unsatisfactory conditions are resolved. Beginning work constitutes acceptance of site conditions and responsibility for defective installation caused by prior observable conditions.

### 3.2 PREPARATION

- A. Coordinate the location of heating units with other work. Ensure units are located to accommodate fittings and units of equipment which are to be placed after the installation of heating units.

### 3.3 INSTALLATION

- A. General: Install heating units where indicated, in accordance with manufacturer's written instructions, applicable requirements of IEC, in compliance with recognized industry practices to ensure products fulfill requirements.
- B. Secure in place with mounting brackets or by fastening back panel of unit to wall, as applicable to type of model specified, unless otherwise noted. Top of heater unit and trim shall be level. Firmly anchor heating units directly or with concealed bracing to building structure. Where heating units are mounted adjacent to each other, the top edges shall be at the same height.

### 3.4 TESTING

- A. Provide testing as required by Division [00] [23] [26].

# Available Options



**Line Voltage Thermostats**  
**Control Panels**  
**Color Matching**  
**Moisture Protection**  
**Stainless Steel Frames and Enclosures**  
**Corporate Branded Elements**

## 10-Year Limited Warranty

Radiant Electric Heat warrants its heating elements against all defects in materials and workmanship for a period of 10 years from the date of purchase, subject to the following terms and conditions:

This warranty applies only for normal use of the product, and shall not be effective for products or parts which do not function properly due to misuse, alteration, installation, accident, negligence, misapplication, modification, improper installation (including improper operating voltage) or maintenance, or if any product or part has been serviced or repaired by other than Radiant Electric Heat. This warranty extends only to the end user or consumer and does not extend to retailers.

This warranty is effective only if the product is operated in the country for which it was manufactured and into which it was sold and purchased. A product that requires modifications or adoption to enable it to operate in any other country than the country for which it was designed, manufactured, approved and/or authorized, or repair of products damaged by these modifications is not covered under this warranty.

Liability of Radiant Electric Heat shall be limited to repair or replacement of any defective product or part that has been returned to Radiant Electric Heat for evaluation, which option shall be the sole decision of Radiant Electric Heat. This warranty is effective only on behalf of the original owner of the product and is not transferable. This warranty is effective only if the user manual instructions have been followed.

THE WARRANTY PROVIDED HEREIN SHALL BE THE SOLE AND EXCLUSIVE WARRANTY. THERE SHALL BE NO OTHER WARRANTIES EXPRESS OR IMPLIED INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS OR ANY OTHER OBLIGATION ON THE PART OF RADIANT ELECTRIC HEAT WITH RESPECT TO PRODUCTS COVERED BY THIS WARRANTY. RADIANT ELECTRIC HEAT SHALL HAVE NO LIABILITY FOR ANY INCIDENTAL, CONSEQUENTIAL OR SPECIAL DAMAGES. IN NO EVENT SHALL THIS WARRANTY REQUIRE MORE THAN THE REPAIR OR REPLACEMENT OF ANY PART OR PARTS WHICH ARE FOUND TO BE DEFECTIVE WITHIN THE EFFECTIVE PERIOD OF THE WARRANTY. NO REFUNDS WILL BE GIVEN. IF REPLACEMENT PARTS FOR DEFECTIVE MATERIALS ARE NOT AVAILABLE, RADIANT ELECTRIC HEAT RESERVES THE RIGHT TO MAKE PRODUCT SUBSTITUTIONS IN LIEU OF REPAIR OR REPLACEMENT.

To obtain warranty service on this product contact Radiant Electric Heat or mail the product and your dated sales receipt (as proof of purchase), postpaid, to the following address:

Radiant Electric Heat  
N112W14600 Mequon Road  
Germantown, WI 53022  
888-774-4450

No COD's will be accepted.

All specifications subject to change without notice.

# Notes

# **RAD****ANT**

ELECTRIC HEAT

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